

Indiana School Weight and Height Collection Program
Annual Report
School Year 2005 – 2006
August 16, 2006

I. BACKGROUND

Significance of the Problem

Obesity poses serious consequences to individuals as well as a significant burden on the economy and the health care system. According to Dietz (1998), 70 percent of the children with a body mass index (BMI) greater than the 95th percentile will become an overweight or obese adult.¹ The number of children in Indiana and the nation who are overweight or obese has been increasing.

The prevalence of overweight among children nearly doubled from 1976-1980 to 1999-2002.² During the period 1999-2002, 31 percent of children aged 6-19 years were overweight or at risk for overweight.³ Similarly, the 2005 Indiana Youth Risk Behavior Survey (YRBS) indicated that 15 percent of Indiana students in grades 9 through 12 were overweight, a significant increase from the 2003 YRBS figure of 11.5 percent.⁴

Tracking Childhood Obesity

Two important sources of data to estimate overweight prevalence in school-age children are the National Health and Nutrition Examination Survey (NHANES) and YRBS. The NHANES uses examinations of individuals to provide population-based, random-sample data. The YRBS uses random surveys to collect self-reported data. Neither system reports data annually. More frequently reported data on weight and height at the local level are not available.

The Academy of Pediatrics and the Institute of Medicine recommend annual weight and height measurement as an assessment strategy for combating childhood obesity.⁵ Several state and local governments have spearheaded school weight and height collection programs, including Philadelphia, Arkansas, South Dakota, New Jersey and Texas. In 2005, the Arkansas school BMI assessment project received a national Prevention Award from the U.S. Department of Health and

¹ Dietz WH. Childhood Weight Affects Adult Morbidity and Mortality. J Nutr 1998; 128(2 Suppl):411S.

² Hedley AA, Ogden CL, Johnson CL, Carroll MD, Curtin LR, Flegal KM. Prevalence of Overweight and Obesity Children, Adolescents, and Adults, 1999-2002. JAMA 2004;291.

³ Crunbaum JA, Kann L, Kinchen S. Youth Risk Behavior Surveillance – United States, 2003. MMWR 2004.

⁴ The 2005 Indiana Youth Risk Behavior Survey: Nutrition and Weight

⁵ Krebs NF, Jacobson MS. Prevention of Pediatric Overweight and Obesity. Pediatrics 2003; 112.

Human Services. These efforts have made a significant impact on programs to promote healthy behavior changes in school and community settings.

Indiana School Weight and Height Collection Program

To help address the need for children's weight and height data in Indiana, the Indiana State Department of Health (ISDH), the Indiana State Department of Education (DOE), and the Marion County Health Department have collaborated to implement the Indiana School Weight and Height Collection Program.

The purpose of the Indiana School Weight and Height Collection Program is to collect and analyze weight and height measurements for Indiana school-age children to help determine the prevalence of overweight in Indiana children and the pattern of overweight over time. Data collected will be used to create policies and programs that promote healthier environments for Indiana children. The weight and height data collected will not be used to diagnose a weight problem in any individual student.

Participation in the program was voluntary for schools and children. Before a child could participate in the weight and height measurement, the child's parent had to agree to that child's participation. The data collection method was also designed to protect the privacy of each child participating in the data collection.

The ISDH Community Nutrition/Obesity Prevention Division (CNOP), in collaboration with DOE staff, provided leadership for the program design and implementation.

II. PROGRAM IMPLEMENTATION

Implementation of the Indiana School Weight and Height Program has involved several steps to inform schools about the project and to seek voluntary participation. The design included using a pilot program to refine the methods to efficiently collect and report the data.

- In April 2005, a pilot study was conducted and completed in eight selected schools.
- In May 2005, WellPoint Foundation donated more than 4,000 measuring tapes and squares. During the same month, the DOE drafted the first letter to schools.
- In July 2005, based on a draft completed by a medical intern at the ISDH, the ISDH and the DOE finalized the Indiana School Weight and Height Collection Guidelines.
- In late August 2005, Judith A. Monroe, M.D., Indiana State Health Commissioner; and Suellen Reed, Ed.D., Indiana State Superintendent of Public Instruction, sent a letter, information packet, and equipment to 1,950 schools. Within months, the ISDH CNOP received 34 questions from schools. Answers to those questions were compiled and posted on the Web site and shared at 10 information sessions around Indiana. The ISDH received confirmation notices from 320 schools, indicating their intent to participate. Some of these schools later opted out of the program, and other schools joined the effort.

- In October-November 2005, 10 information sessions were provided to local schools, with 70 participants representing 140 schools and 70,900 students. Several others attended representing local health departments, local hospitals, parents, and other volunteers.
- In October-November 2005, the ISDH provided information packets to 240 ISDH clinics seeking their support for the project. More than 25 agencies and individuals responded with confirmed support.
- In November 2005, a new Web site was designed for schools to download sample forms, a collection procedures manual, good practice models, and other related information.
- In January-February 2006, CNOP staff members contacted participating schools to provide technical assistance as needed.
- In March 2006, the CNOP, local American Cancer Society, and the local health department staff assisted local schools with more than 1,000 measurements.
- From May 1 to June 15, 2006, schools submitted data to the DOE. The DOE Web site was linked to the ISDH Web site to facilitate data submission for participating schools.
- By June 18, 2006, the ISDH received 19,109 measurements from the DOE site.
- In August 2006, the ISDH Epidemiology Resource Center completed data analysis.

III. STATISTICS/FINDINGS

The following figures/tables are included in this report:

- Figure 1: Students Measured by District
- Figure 2: Students Measured by Race and Ethnicity
- Figure 3: Student BMI Percentiles by Age
- Table 1: Race/Ethnicity Details
- Table 2: BMI Details

During the 2005-2006 school year, 27 Indiana school districts outside Marion County provided weight and height data on a total of 19,109 students. After purging records for children who were younger than 5 years of age and older than 19 years of age, 19,091 records remained for analysis. The number of students per district ranged from 22 to 2,112, with a mean of 694 (Figure 1).

The percentage of male and female students measured was nearly equal, with males at 51.4 percent and females at 48.6 percent (Figure 2). The same was not true with race/ethnicity, as 94 percent of the students were white, with no other racial or ethnic group comprising more than 3 percent of the records (Table 1 and Figure 2.)

Of 19,091 students measured, 2.3 percent were underweight, 60.8 percent were normal weight, 17 percent were at risk of overweight, and 19.9 percent were overweight. The number of students in each of the four weight classifications for each age group is shown in Table 2. These categories include underweight (<5th percentile), normal (5th-84th percentile), at risk of overweight (85th-94th percentile), overweight (95th-100 percentile). The percentage of students in each of the four weight classifications is fairly consistent across age groups (Figure 3). However, Table 2 indicated that the students who were 11 years of age presented the highest proportion of overweight students.

IV. DISCUSSION

The Statewide School Weight and Height Collection of 2005-2006 was the first of its kind in Indiana. While tremendous support was obtained from some schools, the majority of schools decided not to participate in 2005-2006 due to the following reasons:

- Lack of staff and funding
- Lack of support from administrators
- Active Consent Form was too time-consuming
- Concerns about student privacy (reluctance to release student information to DOE)
- Waiting until reporting becomes law

In comparison with Indiana's YRBS, the findings illustrated that the overweight rate identified through actual school weight and height measurements (including at risk for overweight) was 7.6 percent higher than the self-reported YRBS survey rate.

The findings also indicated that 2.3 percent of the students measured were underweight. The majority of the underweight students were 11-12 years of age. This finding was both unexpected and alarming. Public health agencies and schools should make prevention of eating disorders a priority due to the increasing number of cases of eating disorders nationwide.

Because the participating schools were not selected randomly, care must be taken in interpreting the results obtained. Each school's results are not necessarily representative of all students at that school. Similarly, the overall rates of underweight, at risk for overweight, and overweight children are not necessarily a valid reflection of these rates statewide. It should also be noted that the low numbers of participating schools and students measured limit the precision with which statewide obesity rates can be estimated. The purpose of the project was to perfect the sampling process and to provide baseline data to participating schools, and those goals were accomplished. Even though the data from this project are not necessarily representative of statewide obesity rates, we are encouraged by the similarity between our findings and the Marion County results.

V. RECOMMENDATIONS

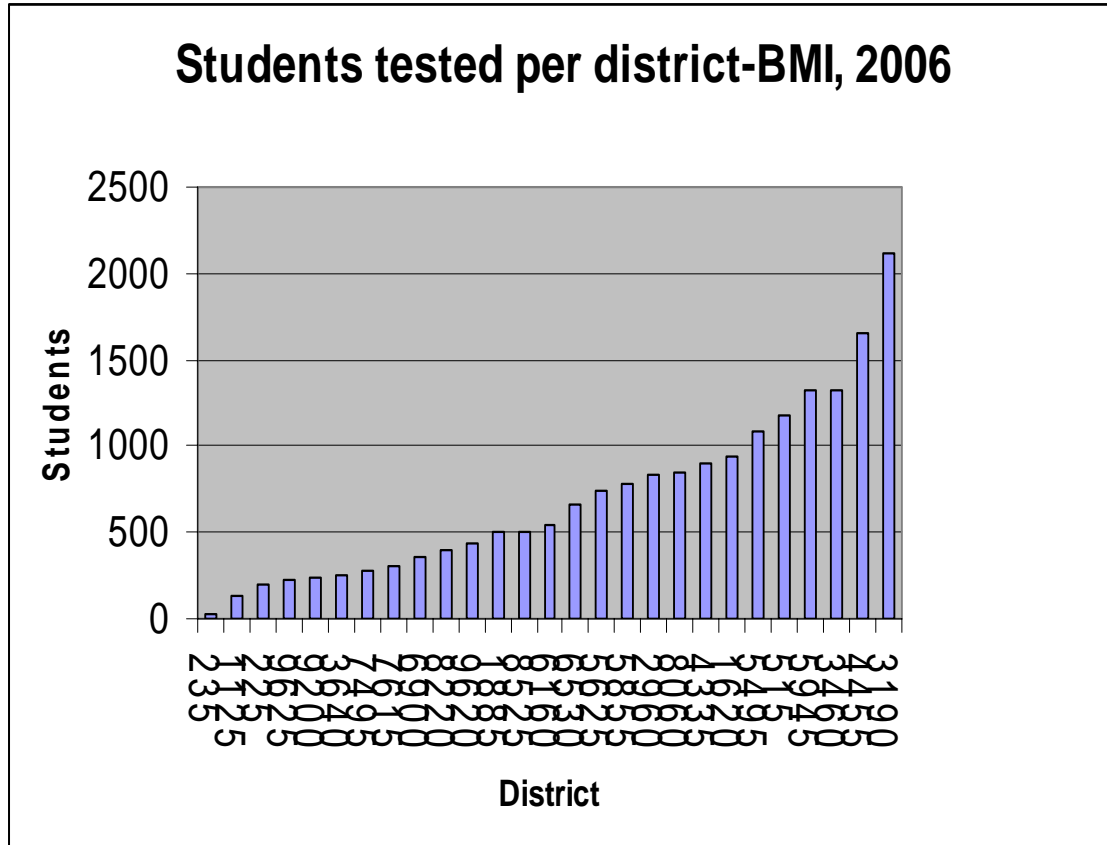
Collecting data on children's weight and height should be included in the school wellness policy to ensure an accountable baseline for program effectiveness in terms of nutrition and physical activities. Schools that participated in the 2005-2006 weight and height collection may use the findings as their needs assessment and become eligible for a pilot nutrition program (Five a Day to Schools) through a collaboration of the ISDH CNOP and the DOE School Nutrition programs. Five a Day presentations, information, and materials for students and families, along with a food demonstration (based on availability of food and chef), will be provided.

For 2006-2007, the program will continue as a voluntary program. The ISDH and the DOE should continue to work with advocates to encourage state policy that would mandate the program in all schools.

ATTACHMENT

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Figure 1.⁶



⁶ Indiana State Student Weight and Height Measurement Data Collected from Participating Schools, 2005-2006

Figure 2.⁷

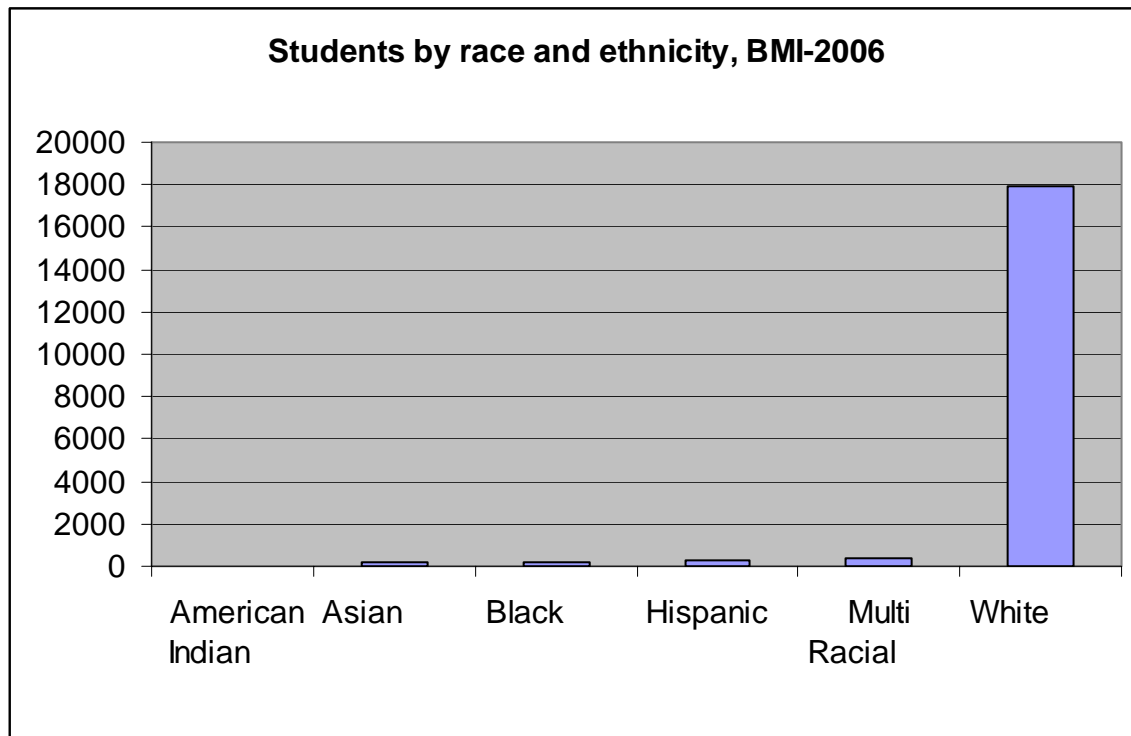


Figure 3.⁸

⁷ Indiana State Student Weight and Height Measurement Data Collected from Participating Schools, 2005-2006

⁸ Indiana State Student Weight and Height Measurement Data Collected from Participating Schools, 2005-2006

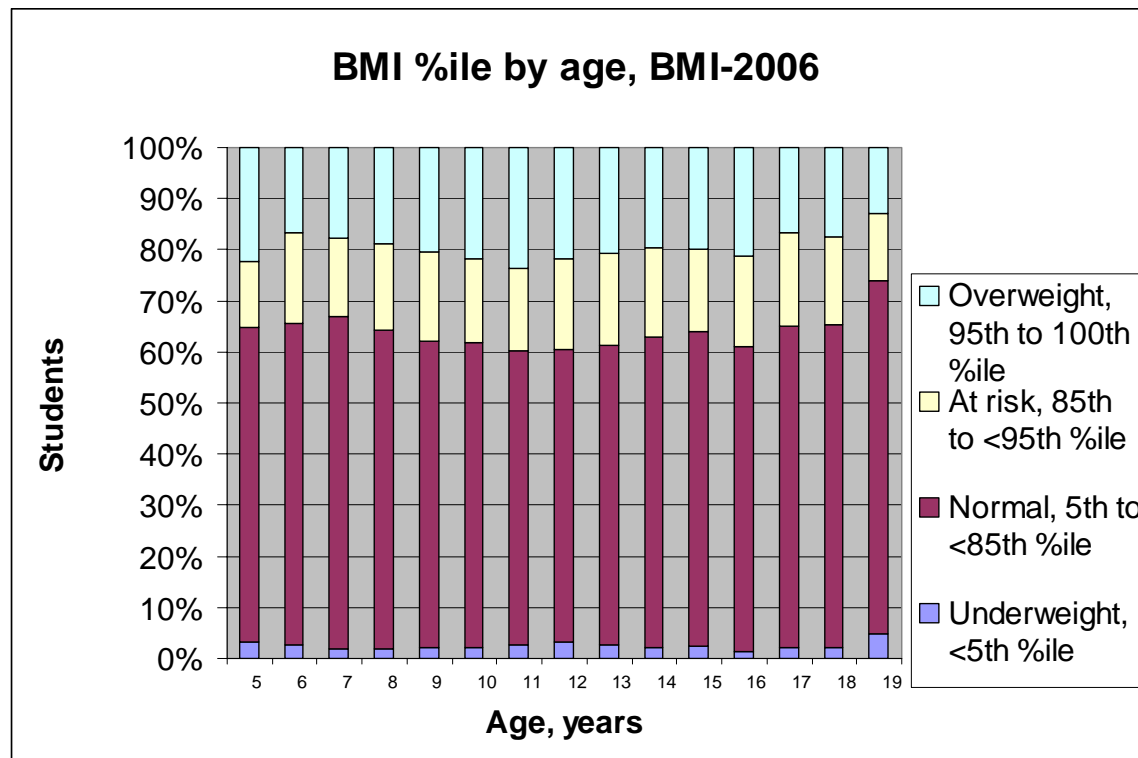


Table 1. Race/Ethnicity Details⁹

Racial or Ethnic Group	Number	Percent
American Indian	43	0.22
Asian	169	0.88
Black	200	1.05
Hispanic	319	1.67
Multiracial	417	2.18
White	17,961	93.99

⁹ Indiana State Student Weight and Height Measurement Data Collected from Participating Schools, 2005-2006

Table 2. BMI Details¹⁰

Age (years)	Underweight (<5th percentile)	Normal (5th-84th percentile)	At Risk of Overweight (85th-94th percentile)	Overweight (95th-100th percentile)
5	3	58	12	21
6	43	1014	286	270
7	34	1132	270	309
8	33	1137	305	343
9	40	1075	317	367
10	43	1122	310	413
11	51	1067	301	438
12	52	922	286	352
13	36	801	245	282
14	26	728	210	237
15	27	678	176	220
16	13	588	172	210
17	20	617	179	163
18	19	563	153	156
19	7	101	19	19
Total	447	11,603	3,241	3,800
%	2.3%	60.8%	17.0%	19.9%

¹⁰ Indiana State Student Weight and Height Measurement Data Collected from Participating Schools, 2005-2006